

Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release

Date: 11<sup>th</sup> August, 2024

Time of Issue: 1345 hours IST

**Subject: (i) Heavy to very heavy rainfall very likely over Western Himalayan Region & adjoining plains of northwest India on today and decrease thereafter.**

**(ii) Isolated heavy rainfall likely over northeast & east India during next 7 days and over Kerala, Tamil Nadu & North Interior Karnataka during next 5 days.**

**Realised weather during past 24 hours till 0830 hours IST of today (Annexure I)**

**Exceptionally heavy rainfall** observed over Karauli (38cm) (dist Karauli), East Rajasthan; **Heavy to very heavy rainfall with extremely heavy rainfall** at isolated places over East Rajasthan, Meghalaya and Tamil Nadu; **Heavy to very heavy rainfall** at isolated places over Himachal Pradesh, Arunachal Pradesh, Assam, Punjab, Haryana, Bihar, West Madhya Pradesh, Konkan & Goa, Coastal Karnataka; **Heavy rainfall** at isolated places over Jammu-Kashmir, Uttarakhand, Uttar Pradesh, East Madhya Pradesh, West Bengal, Bihar, Jharkhand, Tripura.

**Weather Systems**

- ✓ A cyclonic circulation lies over northeast Rajasthan & neighbourhood extending upto middle tropospheric levels. A trough runs from this cyclonic circulation to Bangladesh in lower tropospheric levels.
- ✓ The **Monsoon trough** is near its normal position at mean sea level. It is likely to oscillate near its normal position during most days of the week.
- ✓ Another trough runs from South Interior Karnataka to Comorin area in lower tropospheric levels.
- ✓ Another **cyclonic circulation** over northeast Assam extending upto middle tropospheric levels.

**Forecast & Warnings: (upto 7 days):**

**(Rainfall distribution and Graphics for warning are given in Annexure II & III respectively)**

❖ **Northwest India**

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over Western Himalayan Region and Scattered to Fairly widespread over plains of northwest India during the week.
- ✓ Isolated **heavy rainfall** very likely over Himachal Pradesh, Uttarakhand, East Rajasthan, Uttar Pradesh during 11<sup>th</sup> -17<sup>th</sup>; Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 11<sup>th</sup> & during 14<sup>th</sup>-17<sup>th</sup>; West Rajasthan during 11<sup>th</sup>-14<sup>th</sup>; Punjab on 11<sup>th</sup>; Haryana-Chandigarh during 11<sup>th</sup>-15<sup>th</sup> August.
- ✓ Isolated **very heavy rainfall** also very likely over Punjab, Haryana-Chandigarh, Himachal Pradesh and Uttarakhand on 11<sup>th</sup> and over East Rajasthan on 11<sup>th</sup> & 12<sup>th</sup> August.

❖ **West & Central India**

- ✓ Scattered to Fairly widespread light/moderate rainfall very likely over West & Central India during most days of the week.

- ✓ Isolated **Heavy rainfall** very likely over Madhya Pradesh, Konkan & Goa and Madhya Maharashtra on 11<sup>th</sup> August.

#### ❖ **East & Northeast India**

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over east & northeast India during the week.
- ✓ Isolated **heavy rainfall** very likely over Arunachal Pradesh, Assam & Meghalaya, Bihar during 11<sup>th</sup>-17<sup>th</sup>; Sub-Himalayan West Bengal & Sikkim on 11<sup>th</sup>, 14<sup>th</sup> & 16<sup>th</sup>; Nagaland, Manipur, Mizoram & Tripura and Gangetic West Bengal during 14<sup>th</sup>-16<sup>th</sup>; Jharkhand during 13<sup>th</sup>-15<sup>th</sup>; Odisha on 11<sup>th</sup> & during 13<sup>th</sup>-15<sup>th</sup> August.
- ✓ **Very heavy rainfall** also very likely at isolated places over Arunachal Pradesh on 11<sup>th</sup>; Assam & Meghalaya on 11<sup>th</sup> & 12<sup>th</sup>; Nagaland, Manipur, Mizoram & Tripura on 11<sup>th</sup> & 14<sup>th</sup>, Bihar on 12<sup>th</sup> August.
- ✓ **Extremely heavy rainfall** also very likely at isolated places over Meghalaya on 11<sup>th</sup> August.

#### ❖ **South Peninsular India:**

- ✓ Scattered to Fairly widespread light/moderate rainfall very likely over South Peninsular India during the week.
- ✓ Isolated **heavy rainfall** very likely over Kerala & Mahe, Tamil Nadu and North Interior Karnataka during 11<sup>th</sup>-15<sup>th</sup>; Rayalaseema on 14<sup>th</sup> & 15<sup>th</sup> August.
- ✓ Isolated **very heavy rainfall** also very likely over Tamil Nadu on 11<sup>th</sup>, 14<sup>th</sup> & 15<sup>th</sup>; Kerala & Mahe on 11<sup>th</sup>, 13<sup>th</sup> & 14<sup>th</sup> August.

**For more details, kindly refer:** [https://mausam.imd.gov.in/responsive/all\\_india\\_forecast\\_bulletin.php](https://mausam.imd.gov.in/responsive/all_india_forecast_bulletin.php)

**Significant Rainfall recorded during past 24 hours till 0830 hours IST of today 11.08.2024 (in cm):**

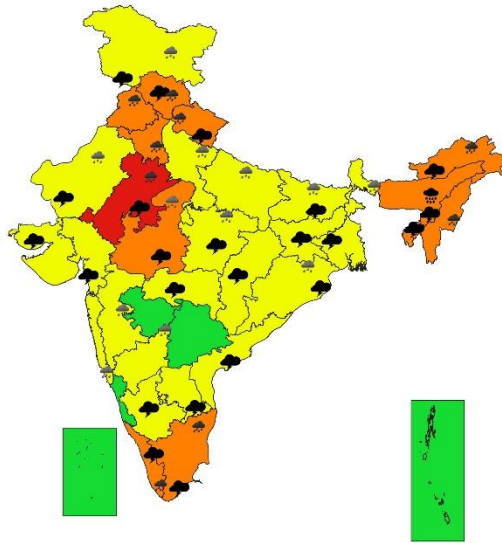
- ❖ **East Rajasthan:** Karauli (dist Karauli) 38, Niwai (dist Tonk) 14, Shahabad (dist Baran) 11, Sikrai (dist Dausa) 11, Tonk Tehsil Sr (dist Tonk) 9, Sapotra (dist Karauli) 9, Hindaun (dist Karauli) 9, Bonli (dist Sawai Madhopur) 8, Mandrayal Sr (dist Karauli) 7, Ladpura Sr (dist Kota) 7, Deoli (dist Tonk) 7, Gangapur (dist Sawai Madhopur) 7, Bayana (dist Bharatpur) 7, Malerainadunger Sr (dist Sawai Madhopur) 7;
- ❖ **Assam & Meghalaya:** Cherrapunji(rkm) (dist East Khasi Hills) 30, Cherrapunji (dist East Khasi Hills) 26, Mawsynram (dist East Khasi Hills) 25, Nahar Katia (dist Dibrugarh) 17, Naharkatia Arg (dist Dibrugarh) 11, Moranhat (dist Dibrugarh) 11, Shella (dist East Khasi Hills) 10, Mawkyrwat (dist South West Khasi Hills) 10, Bhumuraguri (dist Shonitpur) 8, Sonari\_arg (dist Sibsagar) 8, Mawkyrwat\_arg (dist South West Khasi Hills) 8, Williamnagar (dist East Garo Hills) 7, Dillighat (dist Dibrugarh) 7,
- ❖ **Tamil Nadu:** Vilupuram (dist Villupuram) 22, Tiruvannamalai AWS (dist Tiruvannamalai) 17, Gingee (dist Villupuram) 14, Tindivanam (dist Villupuram) 13, Thandarampettai (dist Tiruvannamalai), Marakkanam (dist Villupuram), BASL Mugaiyur (dist Villupuram) 11 each, Idayapatti (dist Madurai) 10, Tirupuvanam (dist Sivagangai), RSCL-2 Kedar (dist Villupuram), RSCL-3 Semmedu (dist Villupuram), RSCL-2 Soorapattu (dist Villupuram) 9 each, Chengam (dist Tiruvannamalai), RSCL Vallam (dist Villupuram) 8 each, Panruti (dist Cuddalore), Uthangarai (dist Krishnagiri), RSCL-3 Valathy (dist Villupuram), RSCL-2 Koliyanur (dist Villupuram), Polur (dist Tiruvannamalai), RSCL-3 Avalurpettai (dist Villupuram), Kalasapakkam (dist Tiruvannamalai), Madurai AWS (dist Madurai), Tirumayam (dist Pudukkottai) 7 each,
- ❖ **Himachal Pradesh:** Nahan (dist Sirmaur) 20, Naina Davi (dist Bilaspur) 14, Una (dist Una) 13, Paonta (dist Sirmaur) 11, Kangra (dist Kangra) 9, Palampur (dist Kangra) 8, Dehra Gopipur (dist Kangra) 7, Ghamroor (dist Kangra) 7, Pachhad (dist Sirmaur) 7, Baijnath (dist Kangra) 7;
- ❖ **Arunachal Pradesh:** Longding AWS (dist Longding) 18, Miao (dist Changlang) 6, Roing (dist Lower Dibang Valley) 6,
- ❖ **Punjab:** Nangal (dist Rupnagar) 17, Anandpur Sahib (dist Rupnagar) 11, Shahpur Kandi (dist Pathankot) 9, Pathankot Iaf (dist Pathankot) 8, Gurudaspur (dist Gurdaspur) 8, Gurdaspur Amfu (dist Gurdaspur) 7, Tibri (dist Gurdaspur) 7, Madhopur (dist Pathankot) 7, Malikpur (dist Pathankot) 7;
- ❖ **Bihar:** Raghunathpur (dist Siwan) 17, Darauli (dist Siwan) 14, Danapur (dist Patna) 13, Sarmera (dist Nalanda) 12, Siswan (dist Siwan) 11, Sugauli (dist East Champaran) 10, Chapra (dist Saran) 10, Kashichak (dist Nawada) 9, Jhajha (dist Jamui) 9, Bochaha (dist Muzaffarpur) 9, Turkaulia (dist East Champaran) 9, Samastipur (dist Samastipur) 8, Manghi (dist Saran) 8, Garhpura (dist Begusarai) 8, Garhi (dist Jamui) 8, Daniawan (dist Patna) 8, Halsi (dist Lakhisarai) 8, Patna Sadar (dist Patna) 8, Noorsarai (dist Nalanda) 8, Giriyaak (dist Nalanda) 8, Katrisarai (dist Nalanda) 7, Punpun (dist Patna) 7, Pachrukhi (dist Siwan) 7, Bodh Gaya (dist Gaya) 7, Fatehpur (dist Gaya) 7, Kodawanpur (dist Begusarai) 7;
- ❖ **West Madhya Pradesh:** Vijaypur (adp) (dist Sheopur) 14, Raghogarh (dist Guna) 11, Kumbhraj (dist Guna) 10, Ghatigaon (dist Gwalior) 7, Veerpur (dist Sheopur) 7,
- ❖ **Coastal Karnataka:** Honavar Obsy (dist Uttara Kannada) 13, Manki (dist Uttara Kannada) 10;
- ❖ **Haryana:** Ambala Rev (dist Ambala) 12, Ambala Cantt (dist Ambala) 10, Sadhaura (dist Yamuna Nagar) 9, Ambala (dist Ambala) 8;
- ❖ **Konkan & Goa:** Dodamarg (dist Sindhudurg) 12,
- ❖ **Uttarakhand:** Kapkot (dist Bageshwar) 10, Gairsain (dist Chamoli) 7;
- ❖ **Jammu-Kashmir:** Kathua Arg (dist Kathua) 9, Burmal Arg (dist Kathua) 9, Kathua\_kv (dist Kathua) 9, Bakore Arg (dist Jammu) 8, Kathua (dist Kathua) 8, Jammu Aws (dist Jammu) 7, Jammu (dist Jammu) 7;
- ❖ **East Uttar Pradesh:** Bhanpur (dist Basti) 9, Dudhi (dist Sonbhadra) 7,
- ❖ **East Madhya Pradesh:** Mauganj (dist Rewa) 9, Prithvipur (dist Niwari) 7, Mada (dist Singrauli) 7,
- ❖ **Jharkhand:** Dhurki (dist Garhwa) 8, Gobindpur Dvc (dist Dhanbad) 7, Koner (dist Hazaribag) 7,
- ❖ **West Bengal:** Phulberia (dist Purulia) 8, Kalaikunda (Iaf) (dist West Midnapore) 8, Harinkhola (dist Hooghly) 7, Amfu Pundibari (dist Cooch Behar) 7;
- ❖ **West Uttar Pradesh:** Agra (cwc) (dist Agra) 8, Bhogaon (dist Mainpuri) 7,
- ❖ **Tripura:** Sabroom (dist South Tripura) 7,
- ❖ **Madhya Maharashtra:** Mahabaleshwar (dist Satara) 7, Igatpuri (dist Nashik) 7, Gaganbawada (dist Kolhapur) 7.

7 Days Rainfall Forecast								
S. No.	Subdivision	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	WS	WS	FWS	FWS	FWS	FWS	FWS
2	ARUNACHAL PRADESH	FWS	FWS	FWS	WS	WS	FWS	FWS
3	ASSAM & MEGHALAYA	WS	FWS	FWS	WS	WS	WS	WS
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	FWS	FWS	FWS	WS	WS	WS	FWS
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	WS	WS	WS	WS	FWS	FWS	FWS
6	GANGETIC WEST BENGAL	WS	WS	WS	WS	WS	WS	WS
7	ODISHA	SCT	SCT	FWS	FWS	FWS	SCT	SCT
8	JHARKHAND	FWS	FWS	WS	WS	WS	WS	FWS
9	BIHAR	WS	WS	WS	WS	WS	WS	WS
10	EAST UTTAR PRADESH	FWS	FWS	FWS	FWS	FWS	FWS	FWS
11	WEST UTTAR PRADESH	FWS	FWS	FWS	FWS	FWS	FWS	FWS
12	UTTARAKHAND	WS	FWS	WS	WS	WS	WS	WS
13	HARYANA CHANDIGARH & DELHI	FWS	SCT	SCT	FWS	SCT	SCT	SCT
14	PUNJAB	FWS	ISOL	ISOL	FWS	SCT	SCT	SCT
15	HIMACHAL PRADESH	WS	FWS	FWS	WS	WS	WS	WS
16	JAMMU & KASHMIR AND LADAKH	FWS	FWS	SCT	FWS	FWS	FWS	FWS
17	WEST RAJASTHAN	SCT	SCT	FWS	FWS	SCT	SCT	ISOL
18	EAST RAJASTHAN	FWS	FWS	FWS	FWS	FWS	SCT	SCT
19	WEST MADHYA PRADESH	WS	FWS	FWS	FWS	FWS	SCT	SCT
20	EAST MADHYA PRADESH	WS	FWS	FWS	FWS	FWS	FWS	FWS
21	GUJARAT REGION	WS	WS	FWS	SCT	SCT	FWS	FWS
22	SAURASHTRA & KUTCH	SCT	SCT	SCT	ISOL	ISOL	SCT	SCT
23	KONKAN & GOA	WS	WS	WS	WS	FWS	FWS	FWS
24	MADHYA MAHARASHTRA	SCT	SCT	SCT	ISOL	ISOL	ISOL	ISOL
25	MARATHAWADA	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
26	VIDARBHA	FWS	SCT	SCT	SCT	SCT	SCT	SCT
27	CHHATTISGARH	FWS	FWS	FWS	FWS	FWS	FWS	FWS
28	COASTAL ANDHRA PRADESH & YANAM	SCT	SCT	SCT	FWS	FWS	SCT	SCT
29	TELANGANA	SCT	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
30	RAYALASEEMA	ISOL	ISOL	SCT	FWS	SCT	SCT	SCT
31	TAMILNADU PUDUCHERRY & KARAIKAL	FWS	FWS	SCT	FWS	FWS	FWS	FWS
32	COASTAL KARNATAKA	FWS	FWS	SCT	SCT	SCT	FWS	FWS
33	NORTH INTERIOR KARNATAKA	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
34	SOUTH INTERIOR KARNATAKA	SCT	SCT	SCT	FWS	FWS	SCT	SCT
35	KERALA & MAHE	FWS	FWS	WS	WS	WS	FWS	FWS
36	LAKSHADWEEP	FWS	FWS	FWS	FWS	FWS	FWS	FWS

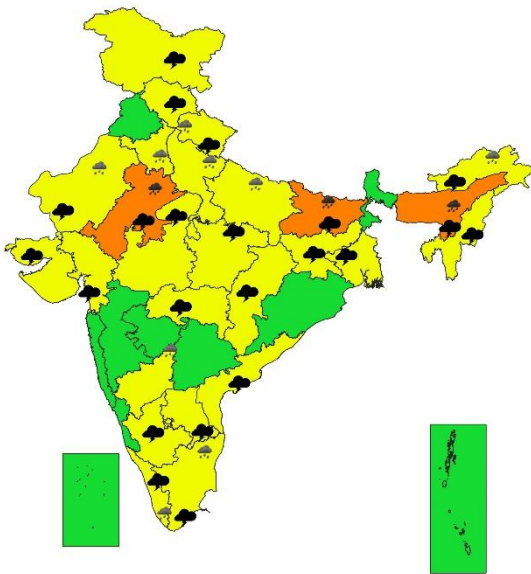
- As the lead period increases forecast accuracy decreases.



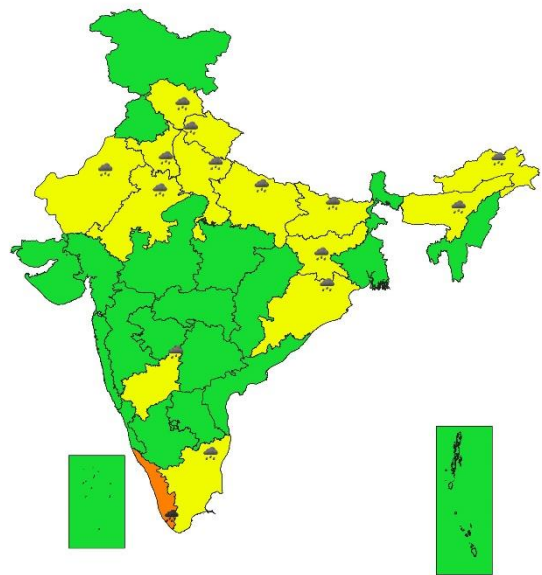
SUBDIVISIONWISE WEATHER WARNING FOR DAY 1  
11-08-2024



SUBDIVISIONWISE WEATHER WARNING FOR DAY 2  
12-08-2024

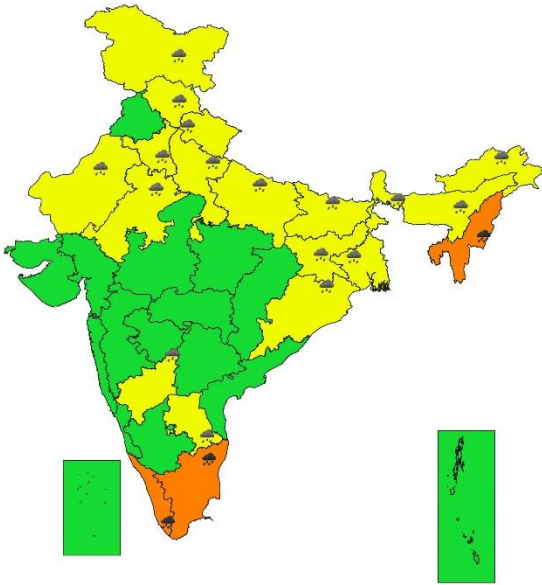


SUBDIVISIONWISE WEATHER WARNING FOR DAY 3  
13-08-2024

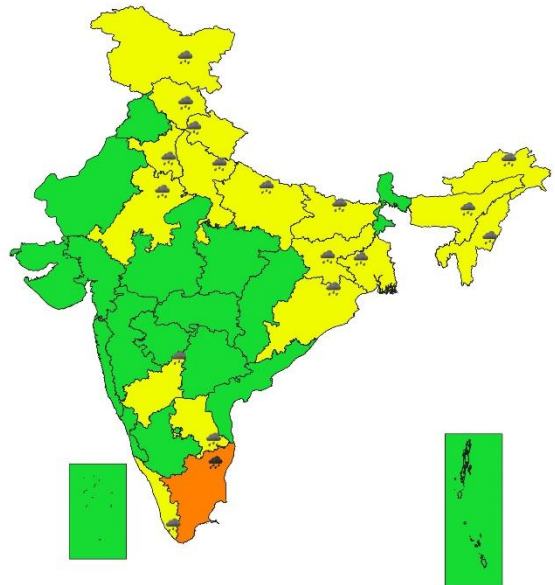




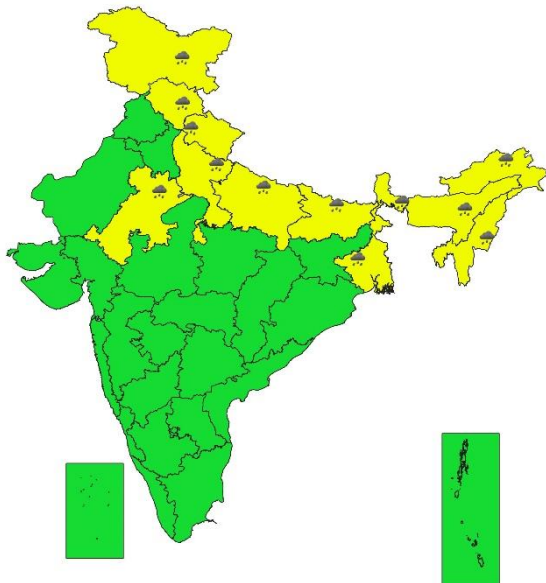
SUBDIVISIONWISE WEATHER WARNING FOR DAY 4  
14-08-2024



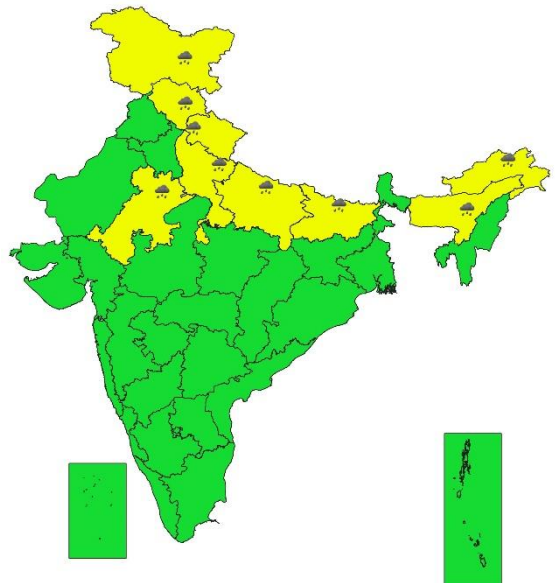
SUBDIVISIONWISE WEATHER WARNING FOR DAY 5  
15-08-2024



SUBDIVISIONWISE WEATHER WARNING FOR DAY 6  
16-08-2024



SUBDIVISIONWISE WEATHER WARNING FOR DAY 7  
17-08-2024



- Action may be taken based on ORANGE AND RED COLOUR warnings.
- Vulnerable regions likely urban and hilly areas action may be initiated for heavy rainfall warning.
- As the lead period increases forecast accuracy decreases.



## Impact due to

- **Extremely heavy rainfall** at isolated places over Meghalaya on 11<sup>th</sup> August.
- **Very heavy rainfall** at isolated places over Arunachal Pradesh, Punjab, Haryana-Chandigarh, Himachal Pradesh and Uttarakhand on 11<sup>th</sup> and over East Rajasthan, Assam & Meghalaya on 11<sup>th</sup> & 12<sup>th</sup>; Nagaland, Manipur, Mizoram & Tripura on 11<sup>th</sup> & 14<sup>th</sup>, Bihar on 12<sup>th</sup>; Tamil Nadu on 11<sup>th</sup>, 14<sup>th</sup> & 15<sup>th</sup>; Kerala & Mahe on 11<sup>th</sup>, 13<sup>th</sup> & 14<sup>th</sup> August.
- **Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of Jammu-Kashmir & Ladakh, Himachal Pradesh, Uttarakhand, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura Met Sub-divisions on 10<sup>th</sup> & 11<sup>th</sup> August. (ANNEXURE IV)**
  - ✓ Localized Flooding of roads, water logging in low lying areas and closure of underpasses mainly in urban areas of the above region.
  - ✓ Occasional reduction in visibility due to heavy rainfall.
  - ✓ Disruption of traffic in major cities due to water logging in roads leading to increased travel time.
  - ✓ Minor damage to kutcha roads.
  - ✓ Possibilities of damage to vulnerable structure.
  - ✓ Localized Landslides/Mudslides/landslips/mud slips/land sinks/mud sinks.
  - ✓ Damage to horticulture and standing crops in some areas due to inundation.
  - ✓ It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC)

## Action Suggested

- ✓ Check for traffic congestion on your route before leaving for your destination.
- ✓ Follow any traffic advisories that are issued in this regard.
- ✓ Avoid going to areas that face the water logging problems often.
- ✓ Avoid staying in vulnerable structure.

## Agromet advisories for Heavy Rainfall likely over various parts of the country

- Drain out excess water from field crops and horticultural crops in Arunachal Pradesh, Assam & Meghalaya, Bihar, Himachal Pradesh, Uttarakhand, Punjab, Haryana, East Rajasthan, West Madhya Pradesh, Konkan & Goa, Tamil Nadu and Coastal Karnataka.
- Make provision for draining out excess water from standing crop fields and fruit orchards to avoid water stagnation in Odisha, Uttar Pradesh, West Rajasthan, Kerala and South Interior Karnataka.
- Provide mechanical support to horticultural crops & staking to vegetables.
- In **Arunachal Pradesh**, make proper arrangements for runoff management in *Jhum* rice fields by putting obstacles across the slopes.
- In **Assam**, postpone sowing of sesame, green gram and black gram.
- In **Meghalaya**, withhold sowing of cowpea and millets.

**Flash Flood Guidance:**

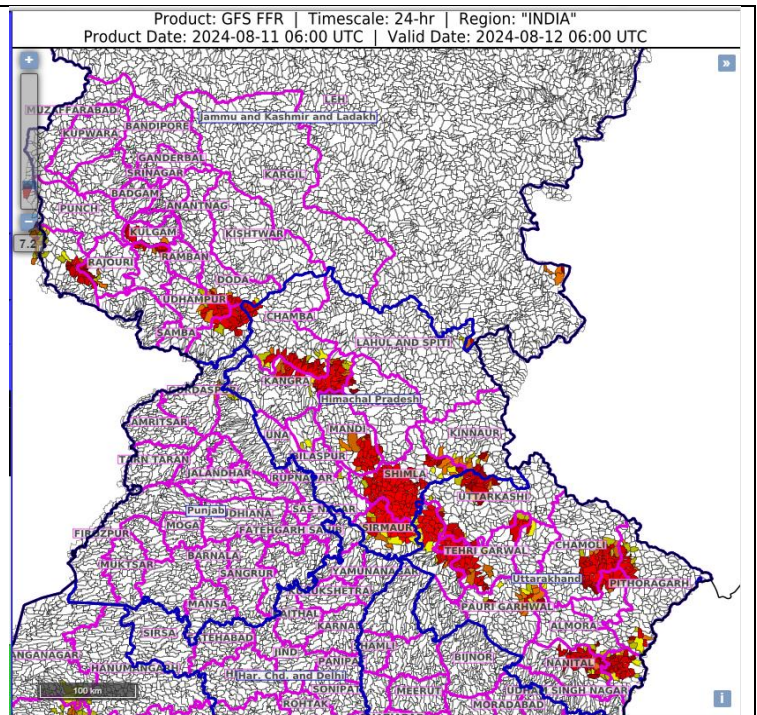
24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 12-08-2024:

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of Himachal Pradesh - Bilaspur, Chamba, Kangra, Kinnaur, Mandi, Shimla, Sirmaur and Solan districts.

Jammu & Kashmir & Ladakh - Doda, Kathua, Kulgam, Punch, Rajouri, Ramban, Riasi and Udhampur districts.

Uttarakhand - Bageshwar, Chamoli, Champawat, Dehradun, Nainital, Pauri Garhwal, Pithoragarh, Rudraprayag, Tehri Garhwal and Uttarkashi districts.

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.

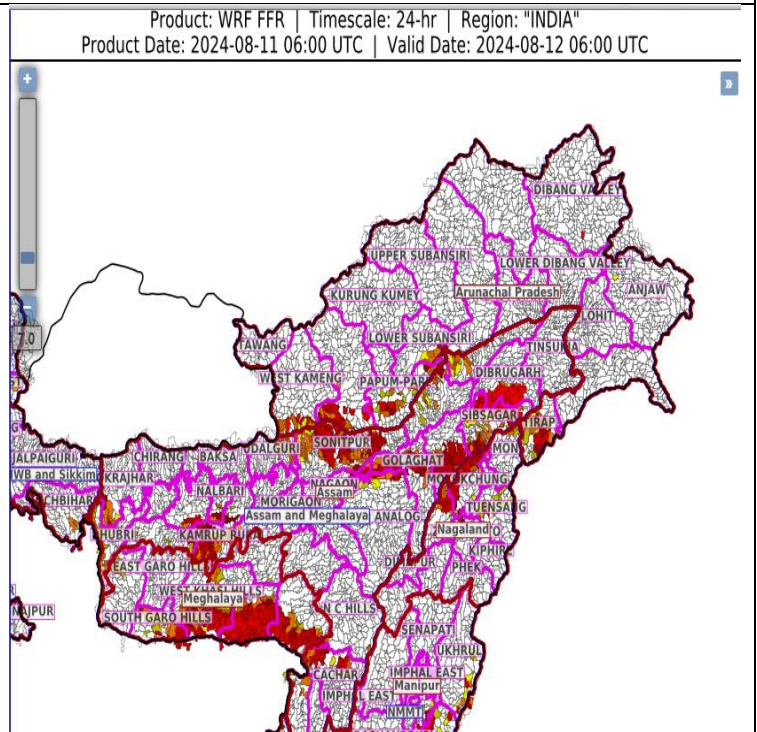


24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 12-08-2024:

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of Assam & Meghalaya - Barpeta, Cachar, Dibrugarh, Golaghat, Jorhat, Kamrup Rural, Nalbari, Sonitpur, East Khasi Hills, South Garo Hills, West Garo Hills, West Khasi Hills and Jaintia Hills districts.

NMMT - Longleng, Mokokchung, Mon and Tuensang districts of Nagaland.

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.





**Legends & abbreviations:**

- ❖ **Heavy Rain:**64.5-115.5mm; **Very Heavy Rain:**115.6-204.4mm; **Extremely Heavy Rain:** >204.4mm.
- ❖ **Obsy:** Observatory; **AWS:** Automatic Weather Station; **ARG:** Automatic Rain Gauge; **dist:** District; **NH:** National Highway; **KVK:** Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation; **PTO:** Part Time Office, **Aero:** Aerodrome, **IAF:** Indian Air Force.
- ❖ **Region wise classification of meteorological Sub-Divisions:**
  - **Northwest India:** Western Himalayan Region (Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand); Punjab, Haryana-Chandigarh-Delhi; West Uttar Pradesh, East Uttar Pradesh, West Rajasthan and East Rajasthan.
  - **Central India:** West Madhya Pradesh, East Madhya Pradesh, Vidarbha and Chhattisgarh.
  - **East India:** Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim; Gangetic West Bengal, Odisha and Andaman & Nicobar Islands.
  - **Northeast India:** Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
  - **West India:** Gujarat Region, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra and Marathawada.
  - **South India:** Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Coastal Karnataka, North Interior Karnataka, South Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal and Lakshadweep.

SPATIAL DISTRIBUTION			
(% of Stations reporting)			
% Stations	Category	% Stations	Category
76-100	Widespread (WS/Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespred (FWS/ Many Places)	1-25	Isolated (ISOL)

 Fog

 Heavy Rain

 Very Heavy Rain

 Extremely Heavy Rain

 Heavy Snow

 Hailstorm

 Dust Storm

 Heat Wave

 Cold Wave

 Cold Day

 Ground Frost

 Strong Surface Winds

 Thunder & Lightning

 Hot and Humid

Subdivision Colour

NO WARNING

WATCH(BE UPDATED)

ALERT (BE PREPARED)

WARNING (TAKE ACTION)

Probabilistic Forecast	
Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75

## LEGENDS

### WARNING

<b>WARNING (TAKE ACTION)</b>
<b>ALERT ( BE PREPARED)</b>
<b>WATCH (BE UPDATED)</b>
<b>NO WARNING ( NO ACTION)</b>

### Probabilistic Forecast

Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75



**Rain/ Snow \***

Heavy: 64.5 to 115.5 mm/cm *
Very Heavy: 115.6 to 204.4 mm/cm*
Extremely Heavy: > 204.4 mm/cm *



**Heat Wave**

**When maximum temperature of a station reaches  $\geq 40^{\circ}\text{C}$  for plains and  $\geq 30^{\circ}\text{C}$  for hilly regions**

**(a) Based on Departure from normal**

Heat Wave: Maximum Temperature Departure from normal $4.5^{\circ}\text{C}$ to $6.4^{\circ}\text{C}$ .
Severe Heat Wave: Maximum Temperature Departure from normal $\geq 6.5^{\circ}\text{C}$

**(b). Based on Actual maximum temperature**

Heat Wave: When actual maximum temperature $\geq 45^{\circ}\text{C}$ .
Severe Heat Wave: When actual maximum temperature $\geq 47^{\circ}\text{C}$

**(c). Criteria for heat wave for coastal stations**

When maximum temperature departure is  $> 4.5^{\circ}\text{C}$  from normal. Heat Wave may be described provided maximum temperature  $\geq 37^{\circ}\text{C}$



**Warm Night**

**When maximum temperature remains  $40^{\circ}\text{C}$**

Warm Night: When minimum temperature departure $4.5^{\circ}\text{C}$ to $6.4^{\circ}\text{C}$ .
Severe Warm Night: When minimum temperature departure $> 6.4^{\circ}\text{C}$ .



**Cold Wave**

**When minimum temperature of a station  $\leq 10^{\circ}\text{C}$  for plains and  $\leq 0^{\circ}\text{C}$  for hilly regions.**

**(a). Based on departure**

Cold Wave: Minimum Temperature Departure from normal $-4.5^{\circ}\text{C}$ to $-6.4^{\circ}\text{C}$ .
Severe Cold Wave: Minimum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$

**(b) Based on actual Minimum Temperature (for Plains only)**

Cold Wave : When Minimum Temperature is $\leq 4.0^{\circ}\text{C}$
Severe Cold Wave: When Minimum Temperature is $\leq 2.0^{\circ}\text{C}$

**(c) For Coastal Stations**

When Minimum Temperature departure is  $\leq -4.5^{\circ}\text{C}$  & actual Minimum Temperature is  $\leq 15^{\circ}\text{C}$



**Cold Day**

**When minimum temperature of a station  $\leq 10^{\circ}\text{C}$  for plains and  $\leq 0^{\circ}\text{C}$  for hilly regions**

**Based on departure**

Cold Day: Maximum Temperature Departure from normal $-4.5^{\circ}\text{C}$ to $-6.4^{\circ}\text{C}$ .
Severe Cold Day: Maximum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$



**Fog**

**Phenomenon of small droplets suspended in air and the horizontal visibility  $< 1\text{km}$**

Moderate Fog: When the visibility between 500-200 metres
Dense Fog: when the visibility between 50-200 metres
Very Dense Fog: when the visibility $< 50$ metres



**Thunderstorm**

**Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)**



**Dust/Sand Storm**

**An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.**



**Frost**

**Ice deposits on ground**

Air temperature $\leq 4^{\circ}\text{C}$ ( over Plains)
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**Squall**

**A strong wind that rises suddenly, lasts for atleast 1 minute.**

Moderate: Wind speed 52-61 kmph
Severe: Wind speed 62-87 kmph
Very Severe: Wind speed $> 87$ kmph



**Sea State**

**Effect of various waves in the sea over specific area**

Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre
High to very high: Wind speed 63-117 kmph ( 34-63 knots) & Wave height 6-14 metre
Phenomenal: Wind speed $> 117$ kmph ( $> 63$ knots) & Wave height $> 14$ metre



**Cyclone**

Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)
Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)
Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)
Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)
Super Cyclone Storm: Wind speed $> 220$ kmph ( $> 119$ knots)